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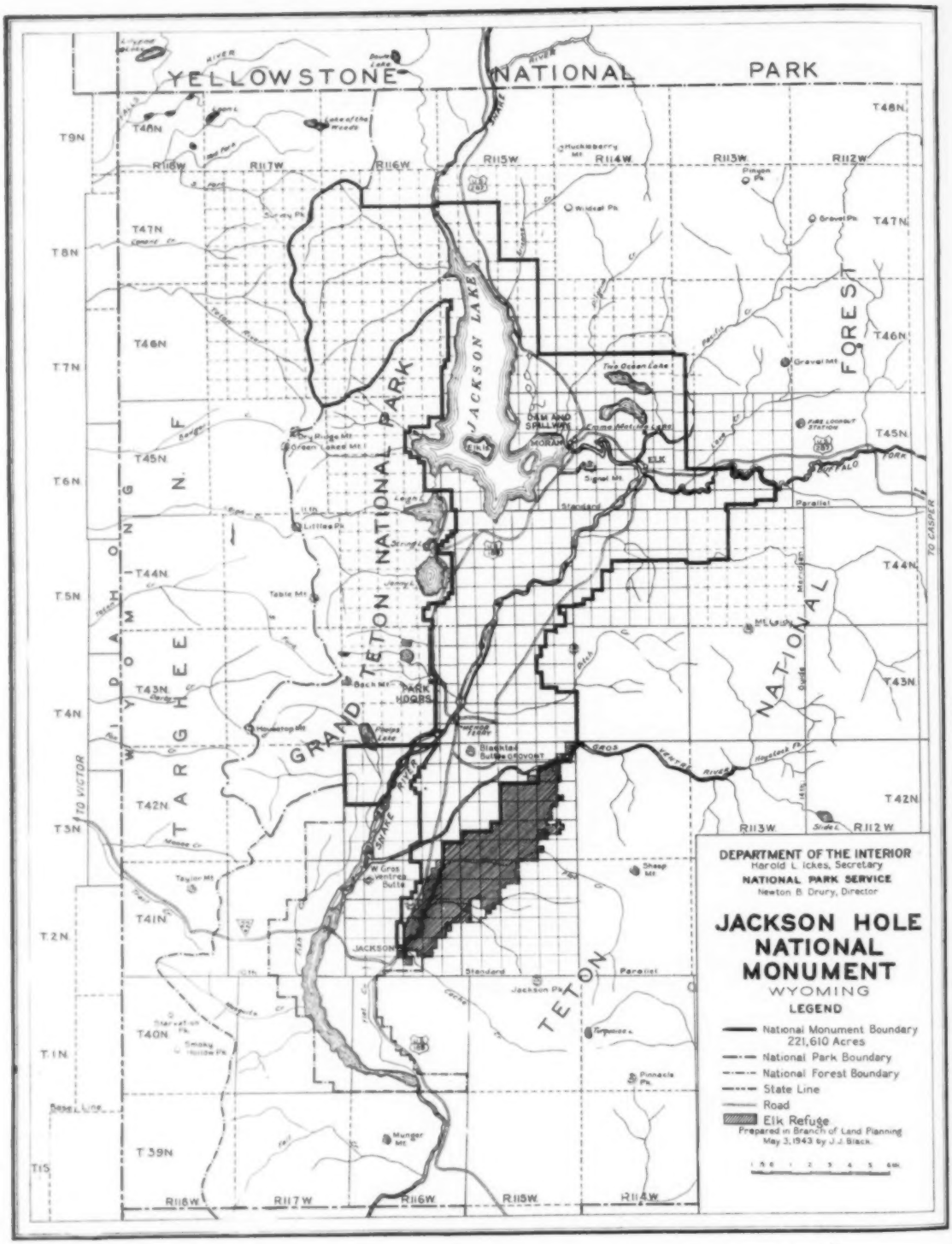
SUDDENLY CREATED JACKSON HOLE NATIONAL MONUMENT IN WYOMING

Photograph by National Park Service

LOOKING DOWN INTO IT FROM ITS SURROUNDING MOUNTAINS


YELLOWSTONE NATIONAL PARK
GRAND TETON NATIONAL PARK
JACKSON LAKE
SNAKE RIVER
TARGHEE NATIONAL FOREST
TETON NATIONAL FOREST
WYOMING RANGE
SNAKE RIVER RANGE
TO VICTOR
TO CASPER
DEPARTMENT OF THE INTERIOR
Harold L. Ickes, Secretary
NATIONAL PARK SERVICE
Newton B. Drury, Director
JACKSON HOLE NATIONAL MONUMENT
WYOMING
LEGEND
National Monument Boundary 221,610 Acres
National Park Boundary
National Forest Boundary
State Line
Road
Elk Refuge
Prepared in Branch of Land Planning May 3, 1943 by J.J. Black.

Jackson Hole National Monument Borrows Its Grandeur From Surrounding Mountains

Created Without Knowledge of the People, it Includes a Reclamation Reservoir Posing as a Lake

BY ROBERT STERLING YARD

FOREWORD

JACKSON HOLE, Wyoming, which the President surprised the nation by proclaiming a national monument on March 16, is not only extraordinary of its new official kind, but physically and especially historically also. It contains few small and scattered areas of originally primitive land, and is fascinating because of the grandeur of its surrounding mountains. It would make a perfect "Grand Stand National Monument" if such a thing were recognized.

With Congress returning from its brief vacation to settle, in the short periods between war discussion, the three or four bills that Jackson Hole people have brought in protest, let us glance for probably the last time at a past intensely characteristic of early America. It may never have another obituary.

For many centuries 30,000 elk passed annually through the immense flat of Jackson Hole into surrounding high mountains, returning in early snow time by the same trails to their winter quarters in the south. It was also the hangout from east and west of continental horse thieves, and later on the gathering place of big game hunters from many nations, including some of our own most famous pioneers.

Importantly, it became the beginning place of national conservation by young George Bird Grinnell, who had come from Yale to see the extraordinary gathering of large wild animals—himself a famous shot. And in time it created, by damming, one of the most famous of the early reclamation reservoirs.

But centuries of centuries before all this, when the extensive lake, of which Jackson Hole had originally been the bottom, drained away as the Snake River wore its Grand Canyon through the southern mountains, there was left a lake far in the north which early explorers called Jackson Lake. When this was dammed in 1911 to raise the level of the river through which it swings south so as better to water Idaho farm lands, it became a commercial reservoir. But they kept the name "Lake" because of its size and of the beauty of the Tetons seen behind it from the road.

As seen on the map, the road south from Yellowstone skirts the dam a long distance and crosses the river just after its emergence from the highly showy spillway. It was apparent at a glance that the "lake's" commercial character would never permit it to be added to Teton National Park.

From the dam, over which it roars like a sizeable waterfall, the lusty South Fork of the Snake River swirls and foams southward the full length of Jackson Hole, near its western boundary all the way, passing the town of Jackson a mile and a half west of it, and disappears in the wilderness beyond.

There had been many who wanted to add practically all Jackson Hole to the Grand Teton National Park, but Congress hesitated to do so because that would add another Hetch Hetchy to the System, a new precedent would be established for damming national park waters, and all conservation organizations and many thousands of citizens would immediately have protested to Congress. It could easily have been made a national monument, however, for the American Antiquities Act of 1906 had granted the President of the United States that power.

When the Carey Bill to make it a national park was stopped in the House in 1934, its proponents might have made it a national monument, for the same Secretary of the Interior, the same President, and the same Antiquities Act through whom it was achieved last March, could have done it then.

I do not recall why they did not try it that way, and there is no record. And what, let us ask, is Hetch Hetchy?

Meantime, national park standards were developing their career. The primitive quality of Yellowstone, Sequoia, and Yosemite (1872-90) was recognized as essential; the right to create was vested in Congress.

Meantime, in 1913, Congress granted San Francisco the right to dam Hetch Hetchy Valley inside Yosemite National Park, in spite of the nation-wide protest led by John Muir.

Meantime, in the 1920's, boundaries of national parks in Colorado and California were drawn in to permit commercial reservoirs to be built and filled without enclosing commercial water, establishing invaluable precedents.

National parks have remained true to standard except for a tunnel far underneath Rocky Mountain National Park. But Congress having killed a bill to permit mining in Glacier Bay National Monument, Alaska, its proponent called on the President five days before adjournment and the same bill was ordered passed. No gold was found, but national monuments lost an invaluable precedent.

The Story In Brief Perspective

THE new Jackson Hole National Monument has few of the components that characterize others of its title. Once a lake bottom, it includes between the former lake edges nothing entitled to be called scenery, unless a man-made irrigation reservoir with several islands can be so called; or a spillway over which water pours from forty feet above the level of nature; and a couple of miles or more of overflowing dam, besides.

These proofs (and there are others) that it is a reservoir and not a lake, in spite of its title, are visible to all comers to Teton National Park by its only commercial approaches, which are by a highway from the north following the Snake River south through Yellowstone National Park to Moran where it bridges the river just below the spillway; and from the south up through the town of Jackson, skirting the dam for a couple of miles before reaching the same bridge. Roads from the east and one from the west via Jackson merge with this north-south highway.

There is also Signal Mountain, which motorists ascend to look at the fine high country which rises on all sides beyond Jackson Hole, but the mountain itself is, like the Hole, commonplace. There is a fine river from north to south but no finer than many thousands of miles of other western rivers. And elk by the thousands pass back and forth between mountain top and hole bottom in season. The elk make a spectacle so extraordinary that, to some, it might warrant the title of national monument were it not that most of these elk lands have been purchased for game refuges under the Fish and Wildlife Service. They have been entered on the map in order that those interested may have the whole picture.

Teton National Park contains 96,000 acres, and the Jackson Hole National Monument contains 221,610 acres—twice as much and 25,610 acres more, including the 32,000 acres which Rockefeller bought to give to the Teton National Park, to which this may be an intermediate step.

Teton National Park is an unforgettable group of titanic peaks of precambrian gneiss. Its proposed intimate partnership with two and a half times its area of flat glacial outwash remaining as nature made it, appears to be absurd. But if the plan is to ask Congress to accept this area as a part of the national park in order to fulfill what Albright has called "Rockefeller's Dream," or for any other purpose, including the commercial reservoir commonly called "Jackson Lake," the country faces the tragedy of another Hetch Hetchy, with all that it implies.

Another Hetch Hetchy! This one to be created by the current Administration with its eyes wide open.

Such a precedent cannot fail in these tempestuous times to doom the standards which distinguish our incomparable National Parks System.

That is the future. It is earnestly to be hoped that this tragedy will not be forced upon us by the war. With time, the National Park Service may find a solution. We believe, without its saying so, that it wants to.

Jackson Hole Bills Hotly Opposed

AMONG the many originally attracted to Jackson Hole by the elk, the hunting, the extraordinary opportunities for grazing and the variety and fame of its furs, were many homesteaders. The first settlement naturally centered where entrance could be had from all directions, and this was naturally named for David Jackson, head of the fur company. It was inevitable that the immense mountain-girt flat north of it should be known as Jackson Hole, for a hole it seemed to be from many points high enough to display the contrasts.

Jackson was never more than a village in size, but the lands, by its energetic population, have eventually developed into four counties. The opposition of this commercial population to the conservation of Jackson Hole and its four-footed population has shown itself for twelve or fifteen years.

The creation of the national monument on March 16 last was followed immediately by a burst of opposition throughout Jackson Hole and in Congress.

Four days after the national monument was announced on March 19, Representative Barrett of Wyoming introduced H.R. 2241 to abolish Jackson Hole National Monument because, if created, it would seriously reduce the lands subject to taxation for local business and for costs of local government.

On April 29, Senators O'Mahoney of Wyoming and McCarren of Nevada introduced S. 1046 to repeal Section 2 of the Act for the Preservation of American Antiquities so as to abolish the power of the President to establish monuments by proclamation.

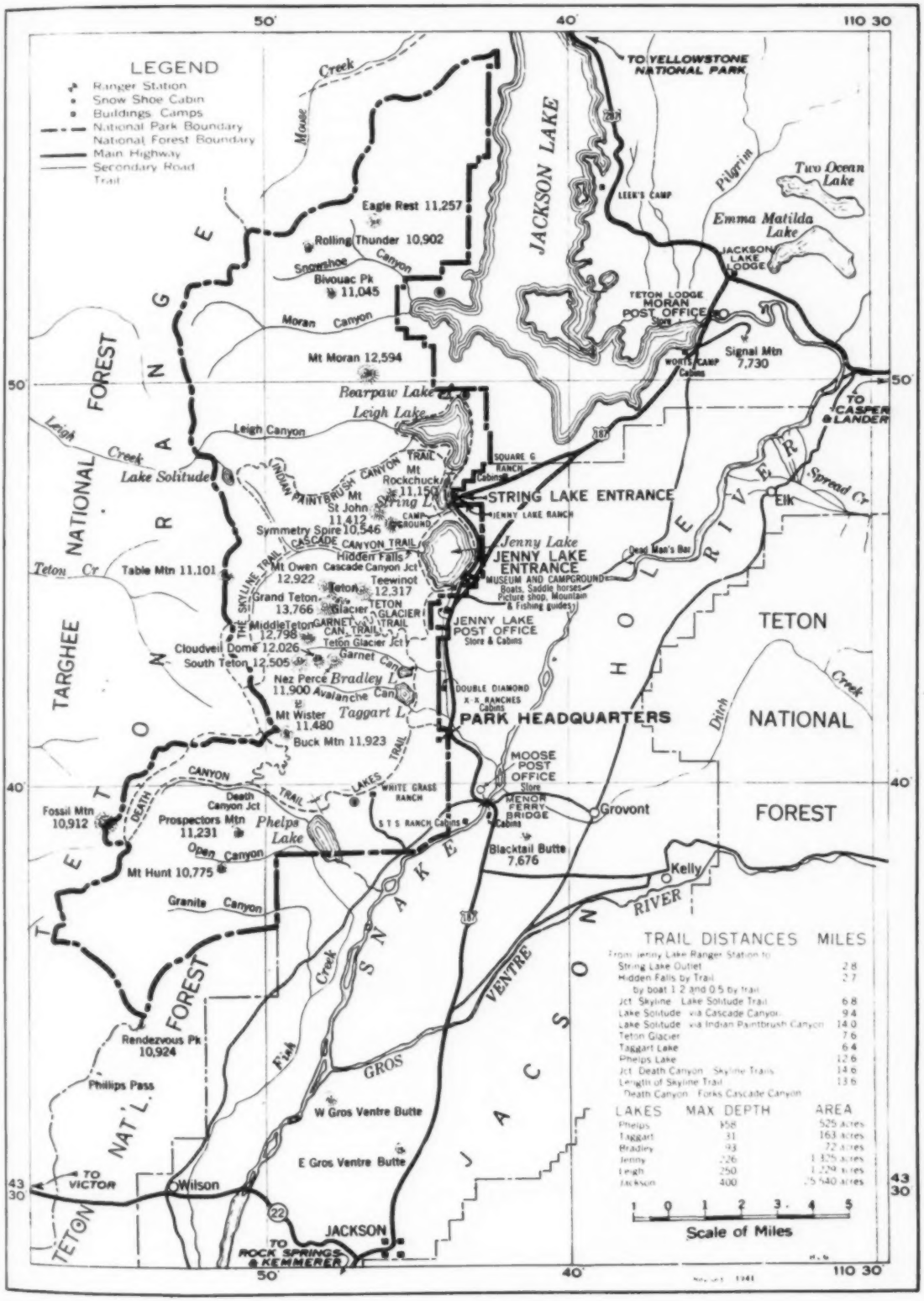
On May 3, Senator Robertson of Wyoming and Representative Barrett introduced S. 1056 and H.R. 2591 to amend Section 2 of the Act for the Preservation of American Antiquities, providing that, before the President can establish a national monument by proclamation, the state in which the area is located shall give its approval.

Meantime, Senator O'Mahoney introduced an amendment to the Interior Department's appropriation bill providing that no part of any of its appropriations shall be used for administrative functions occasioned by the establishment of Jackson Hole National Monument. This passed the House on May 20 and the Senate on June 18. Hearings before their respective committees have been held on most of these bills. The Public Lands Special Committee went to Jackson in August for a hearing.

Representative Barrett's bill to abolish the monument would not restore the lands and waters to their original status, as claimed, but would instead establish the local point of view in the public mind. Also, it would strengthen the local tax situation. The Wilderness Society vigorously opposes it.

Also, we oppose the alteration or repeal of the Act for the Preservation of American Antiquities, which has preserved many invaluable objects of scientific and historic interest in the past which otherwise it would have been impossible to save. The cure for that must lie in education, not of the people, but of their rulers.

"The episode," said the *Saturday Evening Post* on August 28, "will undoubtedly serve to warn millions of Americans of the power available to a determined bureaucracy."



MAP OF GRAND TETON NATIONAL PARK.

CHRONOLOGY

From Before 1830 to 1943

Compiled in 1934 by T. S. Palmer and Robert Sterling Yard from reports, records, recollections and historical writings. The notes on early history are Dr. Palmer's.

THE Rocky Mountain Fur Company began operations in 1827, naming the region after David Jackson, one of its partners. For many years Jackson Hole had been and continued to be the annual rendezvous of hunters and of buyers of furs. It had also been a station in the route of intercontinental horse thieves. Bannock Indians in Utah used it for their hunting grounds.

1848—From Oregon, ceded to the United States by Great Britain, was carved the territories of Washington in 1853, Idaho in 1863 and Wyoming in 1868. To each, as it happened, Jackson Hole belonged in turn, serving in turn under two flags, and four territories and a state.

1862—Homestead Act passed May 20, awarding 160 acres of national land to any citizen who should agree to live upon it and develop it.

1863—James Stuart explored Yellowstone drainage basin in vain for gold, and Walter Washington DeLacy ascended Snake River to Shoshone Lake, which originally was named DeLacy Lake.

1868—Wyoming became a territory and passed its first game law.

1869—By treaty, Congress granted Bannock Indians perpetual right to hunt on public lands.

1871—The Territory prohibited hunting big game between March 1 and August 15.

1872—Yellowstone National Park created. Its fame attracted big game hunters even from abroad. Thereafter, for some years, hunting in the national park increased enormously, inspiring George Bird Grinnell to start the first game protection on a national scale.

1882—Territory changed the open season to September, October and November, and prohibited waste of game. The winter was disastrous to elk, thousands starving in heavy snows.

1884—First settlers moved into Jackson Hole.

1885—Sportsmen petitioned Congress to enlarge the national park. Congress authorized Secretary of the Interior to call on Secretary of War for troops to guard the national park.

1886—Territory prohibited non-residents from killing big game. Army ordered to administer Yellowstone Park.

1888—Winter disastrous to elk because of snows too heavy to enable them to get at the vegetation underneath.

1889—Winter disastrous to elk, also because of snows.

1890—Wyoming became a state. Open season was abolished and the killing of big game prohibited throughout the year. Constables were authorized to be appointed by justices of the peace. Congress authorized National Forest Reserves.

1891—President Harrison proclaimed East and West Yellowstone Timber Reserves, covering all but five townships in Jackson Hole Region. Four state newspapers were bought to fight against the increase of Yellowstone National Park.

1894—Lacey Act to protect birds and animals in Yellowstone National Park was the beginning of complete conservation of wildlife in National Park System.

1895—Racehorse, a Bannock Indian who killed seven elk in spite of the treaty of 1869 was arrested in test case and tried before United States Court. Indian was sustained and state appealed to Supreme Court.

—Prohibition of shooting by non-residents was replaced by state license of $20.

—Jurisdiction of State Fish Commission extended to include game. Appointment of State Game Warden.

—Bill failed in Congress to open Yellowstone National Park to mining claims.

1896—Supreme Court of the United States reversed lower court decision in Racehorse case, holding that admission to statehood repealed that part of the treaty which prevented the Territory enforcing its laws against non-residents.

1898—United States Senate resolution called for report from Secretary of the Interior on "The region south of and adjoining" Yellowstone National Park to determine "whether it should be under park control." Director Walcott of the Geological Survey proposed that it should be made a separate park under the title of Teton National Park.

—Frank Dunham's article in "Recreation" suggesting that an elk refuge should be established on the Red Desert influenced some of Jackson Hole's future thinking.

1899—Wyoming adopted a guide license.

1901—Congress empowered Secretaries of the Interior to permit commercial rights of way through Yosemite, Sequoia, and General Grant National Parks, California.

1902—In more definite response to Senate resolution of 1898, Secretary of the Interior submitted bill adding nearly half as much again to the east side of Yellowstone National Park, even more in a rectangle on the south side nearly to the Gros Ventre River, and a small area on the northwest, altogether nearly doubling the park's area. Failed through lack of support.

1903—Wyoming raised non-resident shooting license for big game to $50.

—James D. Phelan of San Francisco, who had long ago started the project to dam Hetch Hetchy Valley in Yosemite National Park, applied for reservoir sites therein. Secretary Hitchcock of California denied application.

1905—Teton State Game Preserve of 570,000 acres created

south of Yellowstone extending south to Buffalo Fork, and from the Idaho line east to the Continental Divide. Purpose was to stop extension of Yellowstone.

1906—Invasion of summer feeding grounds by cattle caused first suggestion of elk refuge on Gros Ventre River.

—Congress passed American Antiquities Act, Sec. 2 of which follows: "That the President of the United States is hereby authorized, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest, that are situated upon the lands owned or controlled by the Government of the United States, to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected: *Provided*, that when such objects are situated upon a tract covered by a bona fide unprotected claim or held in private ownership, the tracts, or as much thereof as may be necessary for the proper care and management of the objects, may be relinquished to the Government, and the Secretary of the Interior is hereby authorized to accept the relinquishment of such tracts in behalf of the Government of the United States."

1907—Wyoming made tusk hunting a felony. State Legislature memorialized Benevolent Protective Order of Elks in discouragement of use of tusks as organization emblem. Two convictions for poaching in Yellowstone. In March subscriptions were collected to feed starving elk.

—Temporary dam across Snake River below Jackson Lake.

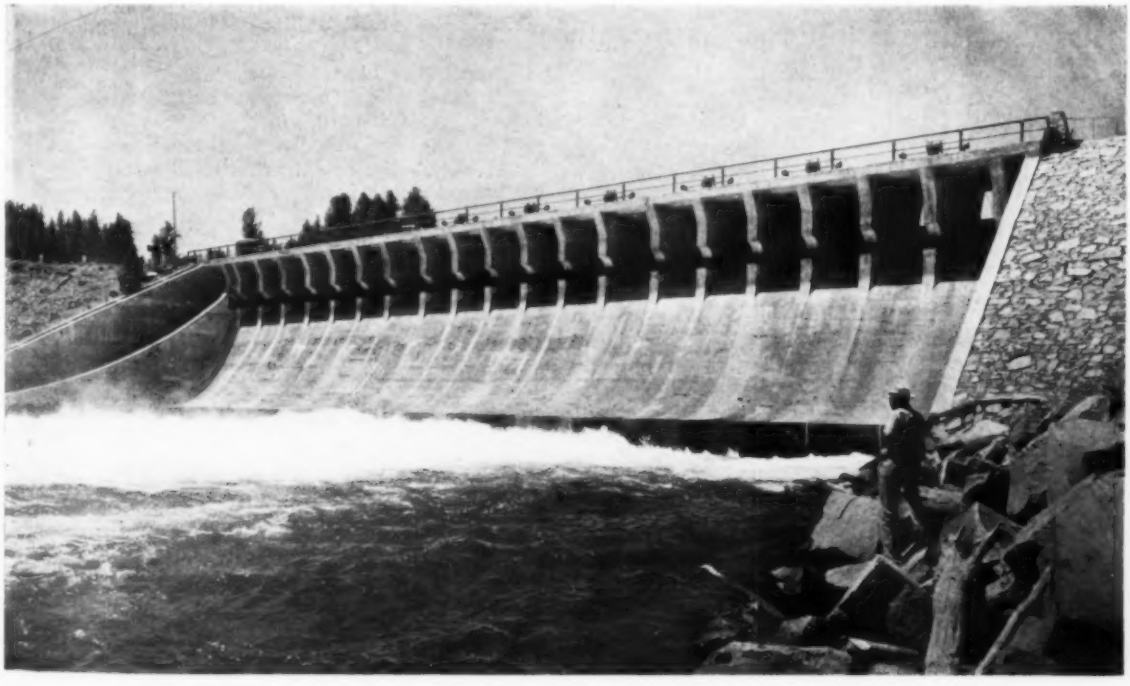
1908—State Warden promoted suggestion for game refuge on the Gros Ventre.

—Secretary Garfield granted San Francisco the rights in Hetch Hetchy which Phelan had persisted in demanding.

1908-9—Claiming that such law would become a precedent dangerous to all national parks, John Muir, President of the Sierra Club of California, led a national protest of astonishing size and energy against the proposed damming of Hetch Hetchy in Yosemite National Park, the letters in which, if printed, would have filled a hundred pages of the *Congressional Record*.

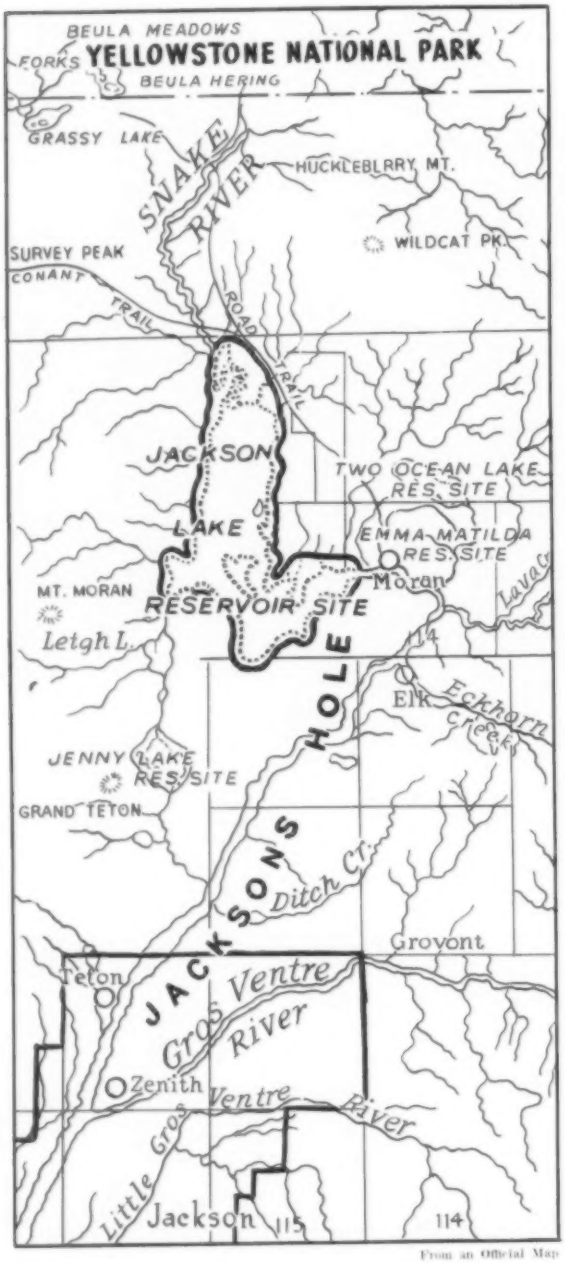
1909—Following a severe winter, Wyoming made first elk-feeding appropriation. It was $5,000. Legislature memorialized Congress, asking five townships for elk refuge. Also requested Idaho to establish State Game Preserve contiguous to Wyoming's. Idaho refused in interest of sheep raising.

1910—S. N. Leek, of Jackson, attracted national attention by broadcasting photographs of starving elk. Wyoming made



Permission Reclamation Service

THIS STRANGE SPECTACLE FOR THE NATIONAL PARK SYSTEM IS THE SPILLWAY OF JACKSON LAKE RESERVOIR, RECENTLY INCLUDED IN THE NEW JACKSON HOLE NATIONAL MONUMENT CREATED BY THE PRESIDENT UNDER THE SECOND SECTION OF THE ACT FOR THE PRESERVATION OF AMERICAN ANTIQUITIES. IT MAKES THE SMALLER ORIGINAL JACKSON LAKE AN IMMENSELY LARGE AND IMPORTANT RECLAMATION RESERVOIR.



From an Official Map

WORKING MAP OF THE "JACKSON LAKE RESERVOIR SITE"

Showing the original Jackson Lake in dotted lines, and, in heavier lines around it, the plan of the present Jackson Reservoir.

its first experiment in transfer of elk elsewhere. This shipment numbered twenty-five, to Big Horn Preserve.

1911—Congress appropriated $20,000 for feeding elk and studying situation. Biological Survey appointed to make investigations. State game warden replaced by commission made up of Governor, Secretary of State, and State Auditor.

—Jackson Lake Reservoir at last was finished and filled.

1912—Congress appropriated $45,000 for elk refuge. Forest Service made first count of elk in Southern Herd, announcing it 13,528, probably far too low due to inexperience.

1913—Congress added $5,000 for game preserve. Land purchases north of Jackson, with public lands added, gave the Biological Survey Elk Refuge 2,760 acres. To this, Izaak Walton League added 1,760 in 1927, making a total of 4,520 acres. Eastern boundary of Teton State Game Preserve increased by large area southeast of Continental Divide near headwaters of the Yellowstone.

—In California, struggle among four consecutive Secretaries of the Interior resulted in a still greater nation-wide protest against Hetch Hetchy than its predecessor in 1908. Water power companies, combining quickly, passed Raker bill in Congress, permitting the Hetch Hetchy and Lake Eleanor Dams in Yosemite National Park.

1915—Stephen T. Mather was appointed Assistant to the Secretary of the Interior in charge of national parks.

1916—The National Park Service was created but not organized at once because Congress neglected to make appropriations. Stephen T. Mather was appointed its Director. Following his first visit to Yellowstone thereafter he suggested revision of the southern boundary "to make it conform to topographic conditions (mountain boundaries) and to include the scenic Teton Mountains."

1917—The National Park Service was organized and Horace M. Albright appointed Assistant Director.

—Emerson Hough urged in the *Saturday Evening Post* a southern extension of Yellowstone sixty miles to include Hoback Valley. East boundary of Teton State Game Preserve saved by excluding hunting area in Thoroughfare Basin.

1918—Director Mather wrote to the Chief of the Forest Service, Henry S. Graves, proposing additions to the south boundary as far as the Buffalo Fork, including the Tetons. Mr. Graves, after a rapid visit, agreed. The plan took official form in the Mondell Bill.

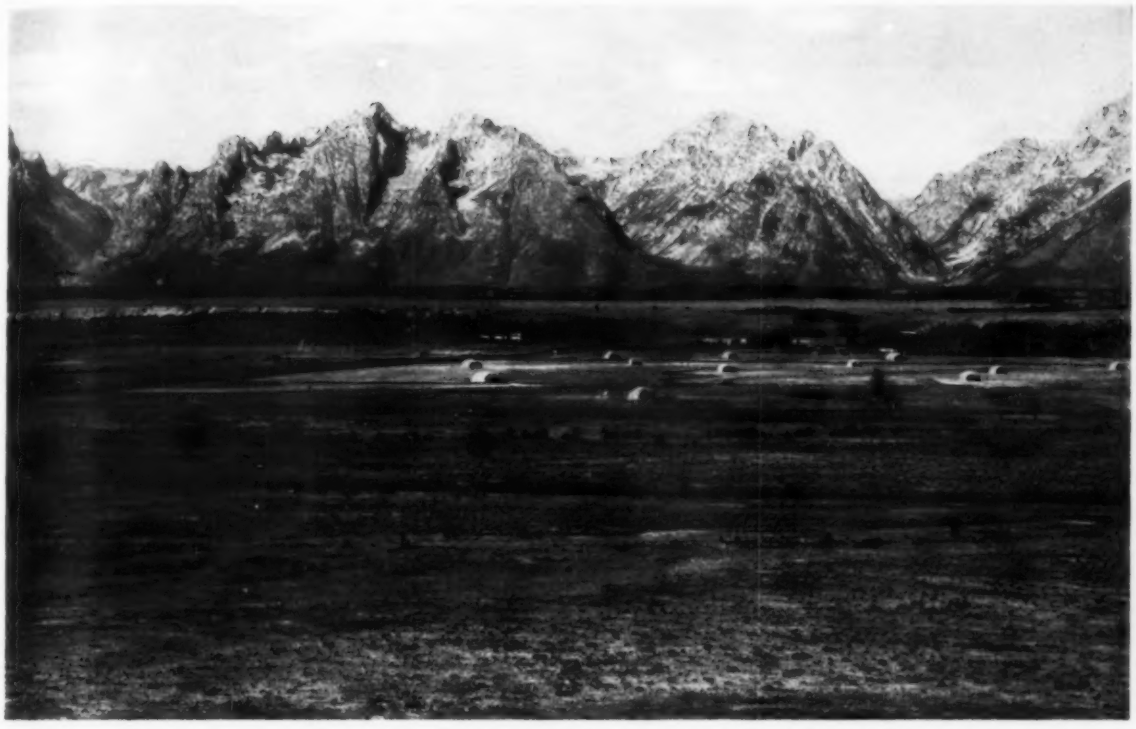
1919—Horace M. Albright was made Superintendent of Yellowstone National Park, Arno B. Cammerer becoming Assistant Director of the National Park Service in his place.

—The Mondell Bill called for adding to Yellowstone all source waters of Yellowstone River, thence west to Buck Mountain, thence north along the crest of the Tetons to Survey Peak, thence west to the Idaho line, thence north to Yellowstone boundary. This plan had some support, but cattlemen and dude ranchers, the latter fearing roads, secured a protest from the Legislature which, wired to Congress, killed the bill in the Senate after it had passed the House.

—The National Parks Association was organized to promote educational use of the national parks and monuments; especially to protect their standards.

1920—Winter was very severe on elk herd. Wyoming furnished 500 tons of hay. Emergency purchase of 575 tons by the Biological Survey, costing $37,000, saved the herd.

1921—Teton County, from Yellowstone boundary south to



CHARACTERISTIC VIEW OF THE SNAKE RIVER PLAIN RECENTLY CREATED AS JACKSON HOLE NATIONAL MONUMENT. ONCE A LAKE BOTTOM, IT IS DOTTED WITH FARMS, DUDE RANCHES, SUMMER HOMES, AND VILLAGES, AND ENCIRCLES A NATIONAL GAME REFUGE. MOUNTAINS IN THE BACKGROUND ARE TETON NATIONAL PARK.

include the Grand Canyon of the Snake River, was cut out of Lincoln County. Jackson, population 500, was made the county seat.

1925—The northwestern boundary of Rocky Mountain National Park was drawn in far enough to permit a commercial reservoir (Long Draw) to be built outside the national park without invading the park when the reservoir should become filled with water. A definite precedent for preservation of national parks against commercial water.

—To settle disagreements between the National Park Service and National Forest Service about national park boundaries, including especially those of Yellowstone, the President's Committee on Outdoor Recreation appointed a Coordinating Commission under Representative Temple as chairman, Congress concurring. Of this, Director Mather of the Park Service and Chief Greeley of the Forest Service were members and became great friends. Others were Charles Sheldon and Major W. B. Welch. The Commission recommended the addition of Tetons as a "floating" or unconnected addition to Yellowstone National Park, the boundaries closely approximating those of the present Grand Teton National Park.

—At Mr. Mather's insistence, Jackson Lake Reservoir was separated from the national park on the map by a narrow strip of national forest, another definite precedent for preservation of national parks from water power. He again emphasized this policy, establishing a third precedent, on the same tour in the case of a proposed reservoir in California, one corner of which would, at high water, have invaded Yosemite National Park.

—Representative Winter of Wyoming introduced a bill in Congress to buy 7,560 acres adjoining the Biological Survey Elk Refuge to add to it, but that failed.

—At the instance of the Ecological Society, 130 other societies and many individuals, Glacier Bay National Monument was established in Alaska to perpetuate the world-famous Muir Glacier and others carrying vast unbroken currents of ice from surrounding horizons into the waters of the bay. Scientifically and scenically a world wonder.

—Ranchers petitioned Congress to make Jackson Hole a recreational area, because ranching and stock raising did not pay.

1926—John D. Rockefeller, Jr., visiting Yellowstone in July, spent two days with Superintendent Albright, examining poorly managed properties in Jackson Hole of which he afterward bought many acres of ranch land.

1927—The Snake River Land Company, representing Mr. Rockefeller, began land purchases in Jackson Hole, unannounced lest land prices should be advanced.

—An Elk Commission under chairmanship of Charles Sheldon made a thorough scientific study which doubtless would remain the last word today if meantime Mr. Rockefeller had

Photograph by National Park Service

LOOKING NORTH AND EAST UP BUFFALO RIVER, AND INTO TETON PRIMITIVE AREA AT TWO OCEAN PASS, SOUTH OF YELLOWSTONE, WHERE ORIGINATE ATLANTIC AND PACIFIC CREEKS.

not purchased 53,750 acres from the Buffalo Fork and Gros Ventre Valleys both inclusive. The Commission set the probable optimum size of the herd at 20,000. Recommended sale of surplus hay in light seasons. Recommended regulated hunting of elk surpluses over number to be decided annually as normal. The predatory animal question should be carefully studied; in any case, coyotes should be kept in numbers permissive of regular hide hunting—a local resource.

—"It is believed," says the report in conclusion, "that when the elk herd is made secure against periodical losses by starvation and is managed in a business-like way, its value as an asset will be greater than that of any other local industry."

—The Winter bill, reintroduced, asking for $275,000 to buy 12,000 acres, was reported adversely by the Director of the Budget.

—The Grand Teton National Park was created by Congress, approximately as recommended by the Commission of 1926, well separated from Jackson Lake Reservoir.

—Camp Fire Club of America, in conference with many others, formulated declaration of National Park Standards which was distributed to Congress, and by a hundred organizations the country over, to their members.

1929—Horace M. Albright appointed Director of National Park Service, due to Mather's serious illness.

1930—The Snake River Land Company made announcement of its purchase for Mr. Rockefeller of 25,000 acres of Jackson Hole land.

—In December the Elk Commission named four solutions of the elk problem: (1) Inclusion in Teton National Park; (2) Inclusion in Forest Service; (3) Inclusion of both Public Domain and Rockefeller lands in Biological Reserve; (4) Inclusion of Rockefeller lands in State Reserve.

1931—At a meeting at the Lions Club, Jackson, Senator Kendrick stated that Superintendent Albright had promised him that, after the Grand Teton National Park should be created, there would be no additions. This promise was right then being broken, he said, by Albright's encouragement of Mr. Rockefeller's land purchases to be added to the national park. He and others severely castigated the Park Service, and denounced Park Plan and Rockefeller representatives. Resolutions declared the meeting unalterably opposed to purchase of lands by private subscription for national park extension. Much later, in an exchange of letters between the Park and Forest Services, Major Stuart aroused antagonism by his proposal to limit the "Park Service domain to guardianship over inspirational, scenic and recreational values."

—The Jackson Hole Plan, endorsed by Cattle and Horse Association, Commercial Club and 225 ranchers appealed to Congress to annex Jackson Hole to Teton National Park.

1932—Senator Carey publicly stated that he would never

federalize Jackson Hole. Representative Carter, who had succeeded Winter in the Seventy-first Congress, declared for the donation of the lands east of the river between Buffalo Park and the Gros Ventre for a winter game refuge to be administered by a commission consisting of representatives of the Forest Service and Biological Survey, two representatives of Wyoming, and a fifth to be chosen by the four. All other lands should be returned to the Public Domain or to the Teton National Forest.

1933—Beginning of the present national administration with Mr. Ickes Secretary of the Interior.

—Introduced by Senator Carey in assault upon Albright, the United States Senate appointed a special committee to investigate activities of the Yellowstone National Park administration, especially in respect to its discouragement of land settlement through Rockefeller purchases. Senator Nye was made chairman but Senator Carey was the initiative force; known as the Carey Committee. But Superintendent Albright retired from the Government on August 11, and Arno B. Cammerer succeeded him as Director of the National Park Service. During the summer, the investigating committee held its sessions in Jackson Hole, but made no report. Interest seemed to have lapsed.

1934—Congress appropriated $4,000,000 for new Upper Snake River Storage for Minidoka Project to supplement, but never to supplant, that of Jackson Lake Reservoir, upon which two hundred miles of intermediate valley irrigation must always solely depend.

—Coming as a surprise to defenders of national park standards who alone had not been consulted, the Carey Bill, which was introduced into Congress on June 10, three weeks before adjournment was expected, proposed to transfer Jackson Lake Reclamation Reservoir and two irrigation reservoirs into Teton National Park as integral parts of it, to transfer the Biological Survey Elk Refuge to the national park as an internal part of it without knowledge and consent of the Biological Survey, to engage the national park in farming and game management largely for the benefit of outside hunting, and to take into the ntional park that part of Jackson Hole which served as the only possible passage for many thousand cattle to and from their summer feeding grounds, and the lumber, mineral and total other business of a great area of productive national forest.

—This slipped through the Senate without a hearing but was stopped in the House the day before Congress ended.

1935—Jackson Hole Commercial Club petitioned Congress to buy area for game propagation and make town of Jackson official entrance to Grand Teton National Park.

1936—Following a popular magazine article by Rex Beach, entitled "The Place is Alaska, the Business is Mining," Delegate Dimond of Alaska introduced a bill in the House to permit mining in Glacier Bay National Monument. The Ecological Society and others who had originally sponsored it, numbering 130 national organizations besides many individuals, poured a flood of protests upon House and Senate which caused its defeat.

—Five days before adjournment, following a call of Beach on the President, the bill which had been defeated in the House was introduced in the Senate, passed both Houses, and was signed on the morning of adjournment. The next summer Beach and several miners equipped with tools examined the monument and discovered no gold.

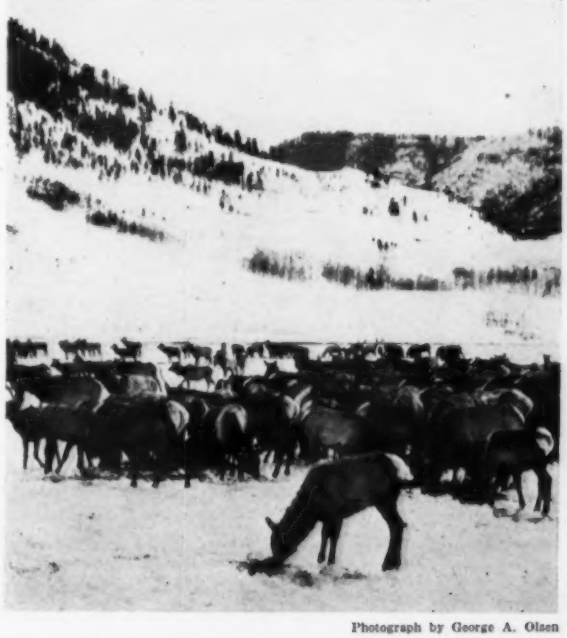
During the following years, two more counties were established in Jackson Hole which cost money to run, and John D. Rockefeller, Jr., increased his purchases of land to 33,795 acres, on which he was paying taxes of nearly $10,000 a year. As he had bought these ranches to add to Teton National Park by gift, and Jackson Hole people preferred his taxes to a national monument, it was suggested that it might be got, independent of Congress, by use of the Antiquities Act.

So it came about.

On March 16, 1943, the Interior Department announced that the Jackson Hole National Monument had been created and the Rockefeller land accepted.

But no bill has been introduced yet in either House to transfer the Jackson Lake Reservoir from the new Jackson Hole National Monument back to the Forest Service. In 1925, at Stephen T. Mather's earnest insistence, Jackson Lake Reservoir was separated in the plan of the national park by a narrow strip of its original national forest, creating another vigorously urged precedent for the preservation of the national park area from irrigation or water power. In those old days Forest Service officials had assured us of their willingness to abide by national parks policy and standards in their own handling of the reservoir.

Why not now? Congress could so decree.



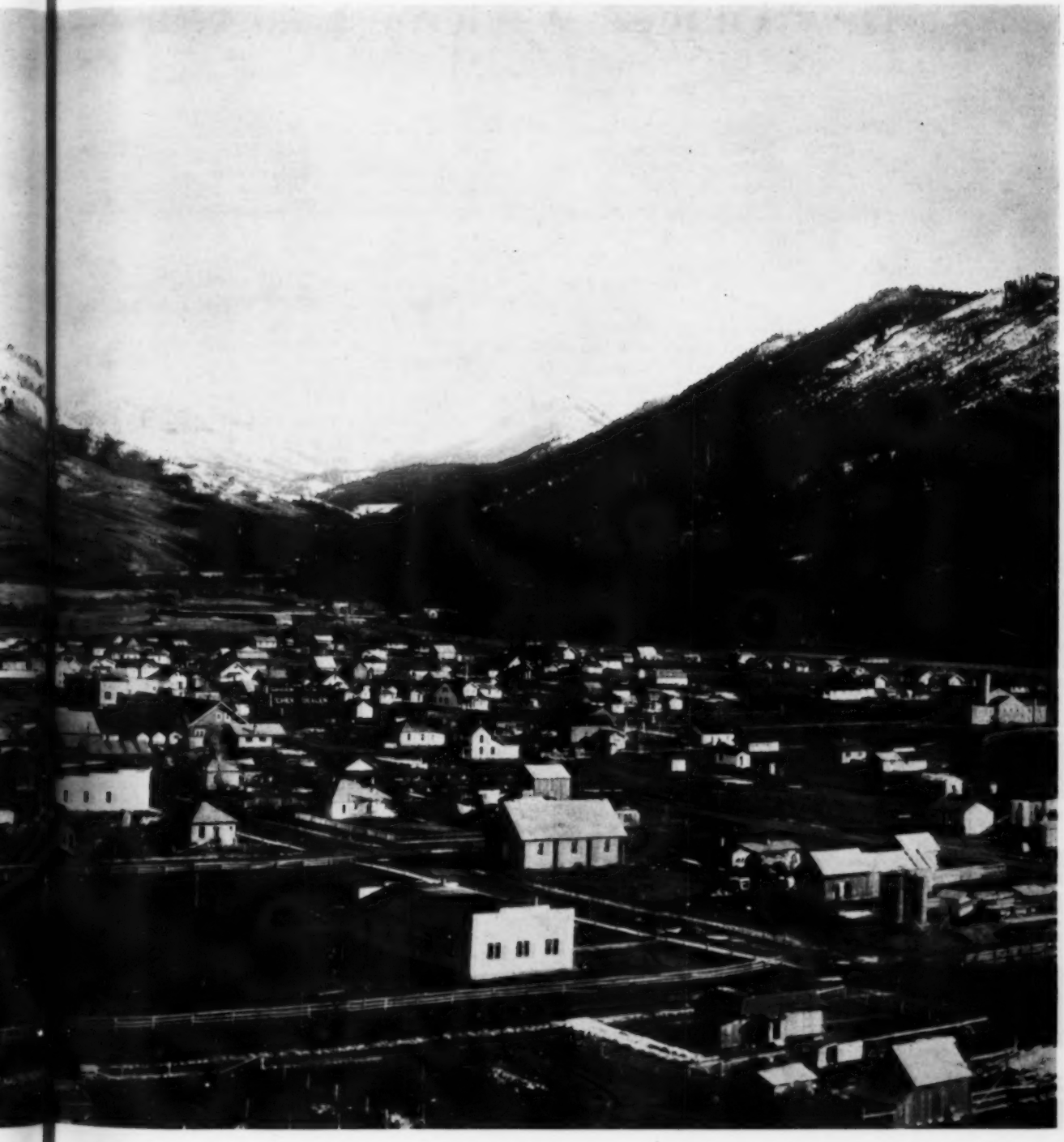
Photograph by George A. Olsen

FISH AND WILDLIFE SURVEY'S FEEDING OF ELK AT JACKSON HOLE.

JACKSON HOLE, WYOMING

APPEALING TO CONGRESS AGAINST THE UNITED STATES GOVERNMENT, ITS PRESIDENT AND THE OVERWHELMING SENTIMENT OF THE COUNTRY IN WHAT IT AMBITIOUSLY CALLS ITS RIGHT TO FARM, MINE, GRAZE, HUNT AND FISH FAMOUS JACKSON HOLE, THIS WILDERNESS METROPOLIS OF 1,000 INHABITANTS IS EXCEEDINGLY PICTURESQUE, ROMANTIC AND UNIQUE. WE DO NOT KNOW WHO TOOK THIS PHOTOGRAPH WHICH OLAUS MURIE, WILDLIFE EXPERT WHO LIVES THERE, THINKS MUST BE TEN YEARS OLD BECAUSE IT SHOWS THE FORMER

WYOMING



WATER-TOWER STILL STANDING. BUT IT IS THE BEST WE CAN GET IN EMERGENCY. EXCEPT FOR WHAT ELECTRICITY, AUTOMOBLIES AND THE PRINTING PRESS CAN DO FOR A COMMUNITY OF ITS SIZE, IT IS A RATHER PRECIOUS REPRODUCTION OF THE WILD WEST OF A CENTURY AGO. WE HAVE OURSELVES SEEN LADY RANCHERS GAMBLING AT NIGHT IN ROOMS BACK OF SALOONS, SOMETIMES BREAKING THE BANK. UNFORTUNATELY, THE TOWN IS GROWING.

New Guinea Wilderness in War

By Captain John Sieker, U.S.A.

(The three V-mail letters which follow give a close-up of the Wilderness in New Guinea in whose mountains Captain Sieker awaits battle contact. You recall him as the First Assistant of Robert Marshall in upbuilding the famous Forest Service Wilderness System, and, on Bob's death, his successor as Chief of Recreation. He is still the latter, as the oFrest Service hopefully holds the place open for his return.—Editor.)

March 27, 1943.

Dear Bob:

Well I'm in New Guinea and it is a real wilderness. I've taken time to travel native trails and visit native villages where cars can't get. The back country is wonderful; grass is waist high or higher in the openings—jungle elsewhere. The Owen-Stanley Range is on the skyline but I've not yet gotten into it—can't get time off long enough for such a trip but I will. Game is plentiful—that is, wallobies and havolina hogs; no fish. The natives are very natural and friendly; they dress scant and are of a high order. It is grand to follow faint native trails which are largely obscured by heavy grass. Fruits and timber are fine. Overgrazing is unheard of. Better come and see New Guinea. I can't help but think how Bob (Marshall) would have loved it. Army training is going swell.

John.

May 14, 1943.

Just got back from a 10-day trip into the mountains. Three of us—and we never saw or heard a car. We followed native trails and they were tough. Steep and following creeks and narrow. Passed through lots of native villages where white men are rare. The natives have wet and dry season villages. They stay on the high ground as long as the springs last and then they go to lower country on some large creek or river. It is more wilderness than anything we have. Even animals have no place on their trails—it's a foot and back-pack proposition. The country is beautiful—varying from open-timber and grass to dense jungle type. The N.P.S. would love to have a chunk of it for a park and commercialize the natives in their grass skirts. Well more later on. I walked about 170 miles in 10 days and felt fine as soon as I got seven or eight hundred feet above sea level.

John.

July 3, 1943.

I've been on another wilderness trip and this is a real wilderness populated only by natives and accessible only by native trails that follow no rules of trail construction. They go into streams and follow the stream for miles—they go straight up and down and often they dissolve into thin air and leave you wondering where the hell they went. The jungle is dense with a beautiful mixture of underbrush intermediates and mature trees—and all interlaced with vines—strong vines, invisible vines, prickly vines that reach out and throw a half hitch around your feet, arms or neck. The open timber types are marvelous—the grass is really waist tall and so dense that it's a struggle to walk through—that's the short grass type—the keena grass is over head high and a good walker would do well to crash through a mile an hour. It is wonderful to travel for days and see no road, no overgrazed areas, no buildings, no improvements of any kind. I wish you could see this country. Well, Bob, keep the Wilderness flag flying.

Sincerely,

John.

ALICE IN WILDERLAND

FOR unaccustomed travelers, not only in the wilderness but anywhere in wild country, the University of Michigan's School of Forestry and Conservation has published a unique book entitled "On Your Own."

Its 149 pages carry advice on how the novice in woodland may protect himself from everything that may harm him, from sunburn to athlete's foot; quicksands to ptomaines; wild plants, wild animals you may or may not want to eat in an emergency; and a great range of living creatures which bite or poison, if you don't look out. These include screw worms, ticks, flukes, leeches, lice, rat fleas and bedbugs.

There are fifty-two drawings.

The authors are Samuel A. Graham and Earl C. O'Roke. Professors in the University of Michigan.

I suppose that I have been within a few feet or inches or less of every creature here named (except the big carnivorous beasts which are most afraid of man) from one to a hundred or thousand times in the last quarter of a century without being conscious of one in hundreds or suffering anything worse than mosquito bites, or thinking myself lucky—until I read this book the other day at home.

Nor have I heard of any tyro who has experienced much more. But I finished the book in one sitting, and now I'm reading it again. Some indigestive night, I may meet them all in my dreams. I hope so. If you don't know the wilderness, I suggest that you do not read this book until you come home from your first trip. But you must not miss it.

Sketch by Howel Williams

THE ANSWER TO THE QUESTION OF HOW CRATER LAKE CAME TO BE IS GIVEN NOT SO MUCH BY THE CRATER THAT IS LEFT AS BY THE MOUNTAIN THAT IS GONE; NOT SO MUCH BY WHAT IS SEEN AS BY WHAT IS UNSEEN.

Human Values in Nature as Represented at Crater Lake

BY DORIS PAYNE

Photograph by Brubaker Aerial Survey

BODY OF WATER OF AMAZING BLUE RESTING IN THE CAULDRON FORMED BY THE PREHISTORIC DESTRUCTION OF A VOLCANO WHICH IS NOW KNOWN AS MOUNT MAZAMA.

TIMES of crisis, recurring as they do through history, always have caused men searching for authoritative guidance to re-examine the fundamental verities of life. Aid has come from many sources, and not infrequently from reflection upon the world of nature as exemplifying the primal force or power controlling the universe. Just as long ago the Psalmist said, "I will lift up mine eyes unto the hills from whence cometh my help," so in the present critical period we, too, lift our eyes toward the hills and find that they do not fail us. On the contrary, we discover that through modern science nature reveals the ways of the Creator in a manner clearer than at any earlier time.

Certain natural features in this country giving strong expression of nature's handiwork have been incorporated in our national parks, each of which presents unique characteristics. In one of these parks is Crater Lake, Oregon, a gem-like body of water resting in the cauldron formed by destruction of an ancient volcano which arose where great eruptions of lava, pouring out intermittently, already had changed the topography of a vast area. The lake, the crater, the original mountain, and the foundation upon which the mountain was formed appear as widely different natural features, and yet they show an interdependence in the development of this region giving spectacular evidence of creation in process.

In order to understand the human values in this masterpiece of nature, and how they may contribute to our thought upon the fundamental character of the world in which we live, it is important that we have before us a picture of the manner in which the loveliness of the lake resulted from those fiery forces represented by the setting in which it rests. In any such consideration the superlative beauty of this place demands first attention.

The entrancing effects produced at Crater Lake by light and shadow, calm and storm, are never twice the same, but the elements upon which these play are more enduring. Such a feature is the roughly circular body of incredibly blue water, nearly six miles across. Such are the imposing cliffs forming a rough-textured tapestry of varied colors, interwoven with a gray background of graduated tones. Such, also, are the groups of graceful hemlocks along the rim, bowing their heads in attitudes of reverence as they frame vistas enhancing the beauty of all else.

The more fleeting impressions resulting from nature's moods shift moment by moment and hour by hour. Pixie-like in their waywardness are wind flurries which ruffle the surface of the water to resemble the wakes of fairy ships. Mirror-like are the reflections of drifting clouds and majestic rock walls, giving double measure of beauty, as if nature had not been prodigal enough already.

Whether the scene is viewed as the rising sun unveils the mysteries of this living mosaic; or as the full light of day illuminates every detail; or as reflected hues are gathered in by the fingers of approaching night, the picture's dominant effect is that of unity. Even the marked contrast between frowning cliffs and the smiling lake contributes toward it, while the harmony and rhythm of all parts in the composition, despite their diversity, emphasize the oneness of the entire complex.

Powerful as is the emotional impact in witnessing such beauty, an even greater experience awaits those prompted to ask, "Whence came this wonder?" For those who have seen Crater Lake with the mind as well as with the eye, know that inspiration may come from intellectual as well as from sensuous perception. They know that when the two are experienced together a broader foundation is laid, upon which emotional responses giving substance to human values are pyramided to greater heights. And they know, too, that what the mind discovers at Crater Lake embraces elements of harmony, contrast and rhythm, combined to produce a sense of unity, just as surely as that seen by the eye.

Whence, then *did* this wonder come? One who asks this question in its presence, inevitably comes to the conclusion that the answer is given not so much by the crater that is left as by the mountain that is gone; not so much by what he sees as by what he does not see. This realization is enough in itself to produce a revelation of magnitude and time and power of immeasurable proportions.

Nor does the impact of this revelation diminish as one learns the supporting facts from those who have spent years in reading from available clues the dramatic autobiography of a mountain that destroyed itself, and from the devastation of which came forth loveliness in the form of a lake. For here once stood a mountain that has been called Mazama, towering 12,000 feet into the clouds—a good mile above the present rim left by its destruction. Yet in the still more remote past, even as now, no such peak existed. There was a day when this volcano was born.

Out of convulsions of the earth it emerged—convulsions that, at various times through the ages, had poured out molten rock which covered approximately 200,000 square miles of the surrounding area and brought the Cascade range of mountains into being. At first the mountain-to-be was an insignificant cone, formed as lava and ash erupted from a reservoir beneath. Century after century and millennium after millennium, it grew ever larger as layer upon layer of melted material flowed down its flanks and solidified.

During this period of growth, there were long epochs when glaciers formed upon the volcano's slopes, filling the valleys with sheets of ice up to one thousand feet in thickness. Time after time they were threatened by fiery outbursts from the mountain, but still they remained until finally all but a small portion of their bulk was melted away by a climate gradually growing warmer.

After the major struggle against destructive power of ice erosion had been won, the mountain-building forces continued their activity unabated. Periodically the pressure from within became so great that masses of viscous rock were forced into fissures in the mountain's sides, sometimes hardening before they reached the surface, sometimes breaking through to form small cones around its flanks.

On the lower reaches of the peak, forests and meadows replaced the white glaciers with a mantle of green. Men using crude stone implements made their homes and hunted game in the valleys and on the plateaus around its base, possibly worshipping Mount Mazama as the dwelling place of their gods. Thus, during a long period of quiescence, the outward aspect of the mountain changed so radically that these primitive men may have been unaware of its capacity for destruction.

Then came a day when ominous rumblings issued from the depths of the volcano, followed by plumes of steam. Its long sleep had ended. Mild at the beginning, the eruptions grew in violence until enormous quantities of gas-filled rock-fragments called pumice were shot high into the sky, to be carried by the wind for thousands of miles. As the activity reached its climax, the pumice no longer was projected into the air, but boiled over the crater rim and down the canyons with astounding speed in the form of incandescent avalanches.

When these climactic convulsions finally ceased, the mountain had undergone two profound changes. Where there had been deep-cut glacial valleys a short time before, there were now broad plains of pumice riddled with steaming fissures. Where once had been the snow-capped crest of Mount Mazama, there was only blue sky. The mighty eruptions of pumice had withdrawn support from beneath the summit, not only causing its engulfment, but also forming an abyss almost six miles wide and four thousand feet deep.

With the passing of time, moisture from rain and snow slowly accumulated in this cauldron, and Wizard Island, a cone within a volcano, was built above the level of the water by the last outbursts of activity from the heart of the decapitated mountain. Finally a fairly stable balance was established between precipitation on one hand and evaporation and seepage on the other. At present, the level of Crater Lake is maintained approximately two thousand feet above the lowest point on the bottom and about the same distance below the highest crest of the rim.

Photograph by George A. Grant

"THE ENTRANCING EFFECTS PRODUCED AT CRATER LAKE BY LIGHT AND SHADOW ARE NEVER TWICE THE SAME, BUT THE ELEMENTS ON WHICH THESE PLAY ARE MORE ENDURING."

Photograph by Sawyer Scenic Photos

THE ENTRANCING EFFECTS PRODUCED AT CRATER LAKE BY LIGHT AND SHADOW. CALM AND STORM ARE NEVER TWICE THE SAME. MIRROR-LIKE ARE THE REFLECTIONS OF DRIFTING CLOUDS AND MAJESTIC ROCK WALLS, GIVING DOUBLE MEASURE OF BEAUTY.

This is the extraordinary story as reconstructed by Dr. Howel Williams, University of California geologist, who has recently published in an outstanding monograph the results of research at Crater Lake extending over a period of five years. His conclusions are soundly based upon the evidence exposed when nature's processes dissected this mountain crosswise and lengthwise to reveal its structure and manner of development. This evidence is open to inspection by all who care to look.

In the walls of the gigantic cauldron, we distinguish layers of lava, volcanic ash, and deposits of glacial debris. We see perpendicular ridges called dikes, formed when molten material, forced into fissures, hardened to produce rock more resistant to erosion than that surrounding it. We examine the calling cards of glaciers in scratches upon the surface of boulders and in U-shaped glacial valleys radiating from the crater rim.

Elsewhere eloquent testimony corroborating this story is given by the pumice covering thousands of square miles of the surrounding country, and by the many charred trunks of trees entombed in the glowing avalanches that rushed down the mountain. In addition, Dr. L. S. Cressman, anthropologist and archeologist at the University of Oregon, has unearthed authentic evidence that man was witness to Mount Mazama's cataclysmic destruction, the date of which is estimated to have been approximately 3000 B. C.

Specific indications that man had inhabited this region for a considerable period of time are in the form of charcoal from his campfires and materials showing his workmanship discovered in association with bones of the prehistoric camel, horse and bison, known to have roamed this section of the earth about 10,000 years ago. Also, stone implements, basketry and matting have been found buried beneath the pumice in caves at Summer Lake about sixty miles distant from the mountain.

The development portrayed, starting with massive outpourings of lava over the surface of the earth and leading to formation of the lake, presents us with a spectacular example of that paradox involved in the constancy of change. Moreover, the gradual widening of the crater through action of wind and water, and the discovery that the lake, once fifty feet higher than it is now, has fallen approximately thirteen feet in the past forty years, impress us with the fact that nature is no more static in the present than it has been in the past. Through these considerations, we are led by contemplation of Crater Lake to a vision of the earth as living, or in process of creation.

A closer examination of the dynamic view of nature as revealed in this particular place, discloses three major conclusions which reasonably may be drawn from evidence presented: First, that the basic forces in nature operate according to dependable laws; second, that time is characterized by a succession of events showing development over a period of vast duration; and third, that each phase of nature, no matter how

unique its character, is related intimately to every other phase. The above conclusions would appear to be fundamental truths which, in these uncertain days, may serve to steady and guide our thinking. Rather than take anything for granted, however, let us reconsider the evidence in order to make sure that the generalizations are justified.

It may be difficult for some persons to believe that there is anything dependable or orderly about a volcano, yet the story of Crater Lake undeniably indicates the truth of this statement. Witness the fact that the laws of nature, operating in the formation of Mount Mazama, produced results identical with those we see in volcanoes erupting under similar conditions today, enabling us to tell, as if it were yesterday, what happened in that distant age. Nor is this an isolated instance of the dependability of natural law. Rather, it is a striking illustration of the orderliness of forces which lie behind every superficial feature of change, whether past, present or future, and determine its character.

To become aware of the continuity of events leading to formation of Crater Lake results almost inevitably in a readjustment of our time perspective and a clear vision of the manner in which development takes place through processes of change. Whether the blue lake, the seething cauldron or the ancient mountain forms the mental image at any given moment, that particular phase is recognized as part of a pattern which extends from the past into the future, gaining immeasurably in significance because of that relationship. The way in which this view differs from our accustomed attitude toward time is comparable to the difference between seeing the distribution of things in space from the ground and seeing it from an airplane at high altitude.

Here at Crater Lake is illustrated also a perfect mutual adjustment of complex phases of nature to one another, each contributing its share to the harmonious whole; each thereby bearing witness to the oneness of all natural elements through all time. Certain it is that if the pre-history of this beauty

Photograph by U. S. Army Air Corps

THE CALLING CARDS OF GLACIERS HAVE BEEN LEFT IN U-SHAPED VALLEYS SUCH AS THE ONE SHOWN RADIATING FROM THE RIM OF CRATER LAKE OPPOSITE WIZARD ISLAND. CLEARLY EXPOSED ON DUTTON CLIFF, AT THE LEFT ARE THE LAYERS FORMED BY SUCCESSIVE LAVA FLOWS.

spot had been different, the lake would not exist precisely as we know it today. This concept appropriately has been called the unity of nature: the intimate inter-relation of all features and forces of the universe, whether expressed by the distant planets or by invisible features of our immediate environment. It is a fundamental characteristic of nature's ways with mountains as with men.

That nature's ways do apply to men as well as mountains is a fact we are prone to forget. But we cannot fail to be reminded of it by the fact that there were human witnesses to the birth of Crater Lake. At the time of the cataclysm, these particular primitive men were essentially at the present stage of biological development. Nevertheless, they still resorted to the simple use of natural materials such as stone, grasses and bone in much the same manner as man did upon first emerging from nature's experimental laboratory as a human being many thousands of years ago.

Having our attention thus directed to the slow process of evolution through which mankind has gone, we cannot ignore the fact that the chief biological feature differentiating man from other types of life is the development and coordination of elements in the nervous system resulting in what we call a mind, marking him as nature's highest achievement. Exercising the powers inherited, we have the potentiality, already partially realized, of doing what can be done by no other expression of nature: of visualizing the relationship of the parts, including mankind, to the whole; of seeing beyond the superficial aspects of the universe to the fundamental influences which have made them what they are, and have made us what we are.

More than that, we have the power to direct these forces of nature into channels for making the future better than the past or, perhaps, into channels leading to retrogression and eventual destruction. To become vividly conscious that this power confers upon us our foremost responsibility as well as our utmost glory is to face a challenge of the highest order.

If we are courageous enough to take up the gauntlet, we will find our most dependable allies in such truths as are made manifest at Crater Lake and, in fact, by every facet of nature about us, no matter how commonplace. At first thought, these verities may appear to be abstract and unrelated to our lives, but they readily demonstrate themselves as being equally applicable to individual problems and to world affairs of sweeping importance.

Let us take the truth that dependable natural law controls the behavior of the universe and everything in it. It is confirmed by our sure knowledge that a carrot seed planted in the garden will produce a carrot and not an onion. It is applied when we have respect for the nature of materials with which we deal, saving ourselves untold trouble by treating rubber like rubber and not like iron, or gasoline like gasoline and not like water. On a larger scale, it has been basic to the advances of science which have contributed so much to our civilization.

Through respect for the laws of nature, we may avoid the futility of trying to break them, knowing that we will only break ourselves against them. To live in accord with these laws and to learn to use them for the greater benefit of mankind is to march forward on the path of progress, both as persons and as peoples; to ignore them may be suicidal.

The importance of the broader perspective of time formed through observation of nature can be realized best by contrasting it with our usual attitude, in which we tend to refer all events in the world to ourselves; in which our temporal unit is the span of our own lives. On the other hand, the view inspired by nature prompts us to see our own and all human activity as related to the moving field of time represented by the universe. Our outlook is stretched to encompass processes that started in a past the beginning of which is hidden and that will continue into a future the end of which is not in sight.

This point of view and that embracing the deeper meaning of time as characterized by processes of development operating through continuous change are of inestimable value to us whether we are called upon to make decisions as individuals dealing with crises in our private affairs or as world citizens passing judgment through public opinion upon weighty problems the causes of which are in the remote past and the solutions of which will influence the remote future. Without proper focus and understanding with regard to time, accurate analysis of the significance and trend of events in either personal or world affairs becomes a matter of chance with the odds against us. On the other hand, a realistic attitude toward time and its associated train of events helps make possible the orderly application of logic and reason to situations otherwise appearing hopelessly complex.

The influence exerted by full recognition of the inherent unity of nature is probably most significant of all. It is primarily from lack of this understanding that we are suffering at present. Let us repeat that by unity of nature is meant the intimate interrelation of all features and forces of the universe —including man.

Partly due to recognition of this principle, we have been able to develop communities that give reasonable guarantee of security and opportunity to each individual. It is the widespread negation of it in international affairs that has permitted the advance of aggressive powers toward enslaving the rest of the world. The irony of it is that although, as nations, we refused to utilize this principle of unity in order to prevent the menace from developing, we are now forced into acknowledging its efficacy in fighting for our very existence.

In other words, if the people of each threatened nation had believed that what affects one affects all, and the political corollary that what affects the rights of one affects the rights of all, their leaders would have been empowered to unite to subdue the aggressors when their intention was first revealed, with relatively little cost in resources or in lives. We are now forced into recognition of the principle at a cost unparalleled in history.

These few applications of basic truths of nature in terms of human values can be multiplied indefinitely. If we have ignored them, we have paid—or are paying—the price. What is done cannot be undone, but the dominance of natural law, the orderly development of events through time, and the unity of the world about us can be depended upon to continue in the future as in the past. Our concern now is to become intensely aware of these verities by observing their expression, both in striking phenomena such as those at Crater Lake and in simple things like the house plant on the window sill. By so doing, we shall profit through their influence upon the scale of values by which we unconsciously make judgments and test actions.

Thus equipped we may go forward, strengthened in our resolve to build a better world by faith born of confidence in the orderly operation of universal forces; by hope born of the assurance of progress inherent in a panoramic view of time; and by good will born of the vision of an advancing civilization based upon the principle of unity.

Photograph by W. P. Taylor

ONLY ARMADILLO IN THE UNITED STATES. IT IS THE NINE STRIPED SPECIES AND LIVES IN TEXAS. EATS PRACTICALLY EVERYTHING AND SOMETIMES ITSELF GETS EATEN. SAID TO TASTE MUCH BETTER THAN IT LOOKS.

Some Animals of the American Wilderness

By Walter P. Taylor

Senior Biologist, United States Fish and Wildlife Service

The Abundance of Wild Animals

"THE manor of living nature is so ample that all may be allowed to sport on it freely. The most jealous proprietor cannot entertain any apprehension that the game will be diminished or even perceptibly thinned." So wrote Dr. Richard Harlan, in his book, Fauna Americana, published in Philadelphia in 1825, just 113 years ago.

What a panorama of abundant wildlife must have graced the explorers and pioneers, east, west, north, and south, to inspire so universally the blind faith in the inexhaustibility of our natural resources. This was a false faith that even yet has not been wholly eradicated, although the evidence of pitifully small remnants of some of our valuable wildlife species, and some of these still diminishing, should teach us better.

Perhaps if one could look at North America's resources through the eyes of some of these sturdy old scouts, gifted beyond most of their fellows with courage, indomitable will, and ability, travelers at a time when the wildlife and the Indian possessed the land, he could get a better conception of former and present conditions, more accurately appraise the extent of present depletion, and more surely suggest remedies. John Smith in Virginia, Daniel Boone in the Ohio country, Jim Bridger in the Rocky Mountains, Lewis and Clark in the great Northwest, Audubon in the deep South, and Coronado, Father Kino, Jedediah Smith, and Moses Austin in the Southwest—all these men, traveling slowly, discreetly, over the virgin landscape, must have been inspired in a manner of which in these days we can have very little conception. The forests were obstacles to be traversed and ultimately cut down; the fur

(From a chapter in George Edwin Potter's Textbook on Zoology with the author's and Mr. Potter's permission and that of C. V. Mosby Company, Publishers.)

animals were often the chief motive for exploration, and the game a source of food, one of the means whereby the expedition became practicable.

It is true that in some of the unbroken forests, deer may not have been so abundant as they are today in the same area; for deer and similar wildlife like borders and developmental stages of vegetation better than they do pure forest stands. Similarly, bobwhite quail may have been less generously represented in the broom sedge of the southwestern United States than in the more varied environment of the present. On the whole, however, taking account of variations in numbers dependent on habitat, the generous abundance of the wildlife resources encountered in those early days is difficult for us to conceive. Let us examine some of the records.

Buffalo were widely distributed on the North American continent, almost from the Atlantic to the Pacific, and almost from the Arctic barrens to the Gulf of Mexico. Their numbers were estimated at not less than sixty or seventy million individuals. The American bison, as they grazed the plains country or migrated with the seasons, must have been one of the outstanding wildlife phenomena of all time. The year 1584 found the Spanish explorer Espejo marching down the Pecos River in what is now New Mexico and Texas. For 120 leagues, or more than 300 miles, Espejo and his party traveled down the valley of this river, passing through great herds of buffalo all the way! Small wonder that he called it Rio de las Vacas.

It is well known that the pronghorned antelope is found on the continent of North America and nowhere else in the world. This creature, combining as it does some of the characters of the cow and the deer, is unique. It is the only member of its species, genus, and family. While North America shares such animals as the bear, deer, moose, elk, and beaver with the Old World, the pronghorn is peculiarly our own. Like the buffalo, the antelope was found very widely over the plains, although its range was not so extensive as that of the buffalo, and by some authorities it is estimated to have been equally abundant.

Senate Committee on Conservation of Wildlife
MOUNTAIN GOAT IN WINTER

We find ourselves incapable of visualizing or appreciating in any adequate way the number of wild mammals or birds or of dollars or doughnuts, for that matter, when they get up into the millions. In order to obtain a hint of the numbers of passenger pigeons in the early part of the nineteenth century let us examine a calculation of pigeon numbers made by no less an authority than John James Audubon, the celebrated early American artist and ornithologist. In describing a flight on the Green River in the Ohio country one year, Audubon estimated that in an area along the Ohio River one mile broad and 240 miles long, counting two birds to the square yard and not taking into account the several layers of birds, one above the other, there were fourteen hundred million passenger pigeons. About equal numbers were reported on the Kentucky River at the same time. The February flight in Ohio and Indiana contained twenty-two hundred and seventy-six million more. All these flights together made a total of nearly five billion birds in the three states along the Ohio River. Old-timers still living in eastern Texas report passenger pigeons as still numerous in the 1870's n parts of that state. So abundant were these birds over their original range that when, after a long period of exploitation, the inevitable happened and the species disappeared, many and varied were the explanations offered. But there is really no mystery at all. Carloads of birds were shipped direct to the big city markets for weeks during the nesting season. If there is any mystery, it is that the birds persisted as long as they did.

The deer family, including some of the most magnificent animals in the world—caribou, moose, elk, mule deer, black-tailed deer, and the Virginia deer—has fortunately, with few exceptions, proved to be tough and tenacious. Caribou may still be observed in large numbers in the Mount McKinley region and in other suitable parts of Alaska. Moose, although they have been extirpated from New York, Pennsylvania, and some other states, still persist over much of their former range, a remarkable fact when the size and character of the animal are considered. Elk, or wapiti, now reduced to a few favorable localities in the West, were originally of general distribution nearly throughout the country. True deer of the several varieties mentioned above have persisted over much of their former ranges, at least wherever habitat conditions coupled with an interest in deer conservation on the part of intelligent landowners have made such persistence possible. Although in a few places, as in parts of Pennsylvania, deer may be more abundant now than formerly, as a result primarily of man-made openings in the forests, in most instances deer have decreased. Strecker points out that between 1845 and 1853 no fewer than 75,000 deer hides were marketed by a single firm dealing in furs and hides and operating out of Trading House Creek near Waco, Texas. At present deer are scarce in this general region. This is a striking example of what has happened throughout the country.

The collared peccary is the only North American wild pig. Formerly found widely throughout southwestern Texas, and

Fish and Wildlife Service

OUR MOST POWERFUL ANIMAL, THE GRIZZLY, IN HIS HOME

still occurring over a considerable area in that state as well as in southern Arizona, New Mexico, and old Mexico, the peccary has been forced back into a relatively restricted range. In this instance the cause of the "recession" was the unfortunate (for the peccary) discovery, as pointed out by Theodore Roosevelt, that peccary hides were worth "four bits" each for gloves or other leather goods! Protection of the peccary has been very erratic, seemingly more a matter of chance interest in the state affected than of careful planning.

The former range of the beaver, our most valuable rodent, was almost coextensive with the outlines of North America, excepting only in the extreme North, the ultra-arid region, and parts of the low-lying South and Southeast. Its numbers must have been correspondingly great. It is said that some of Canada's great modern cities are founded on the sites of former beaver colonies. Historians, economic and epic, have frequently referred to the beaver as a principal object of pursuit of the early day trapper and explorer, but the complete story of the close and intimate relation of the beaver to the progress of man, both Indian and white, can probably never be written. Now forced back by unintelligent exploitation and persecution almost beyond our boundaries into Canada, the beaver is represented in the United States by scattered remnants only. The experience of Wisconsin, Michigan, New York, and Pennsylvania, however, indicates the entire practicability of the restoration of this highly useful animal over vast stretches of its former domain. The desirability of such restoration is increasingly appreciated as man recognizes the value of the beaver as a soil conservationist; for this most interesting rodent is the original check-dam engineer. The beaver was in the business of soil-building, soil conservation, and flood prevention a hundred thousand years ago.

Along with the beaver, certain other fur animals, among them the mink, raccoon, marten, fisher, otter, wolverine, skunk, opossum, lynx, muskrat, badger, and fox, have for long been sought for their furs. Some, as the otter and fisher, were formerly present in far greater numbers than they are at present. All, save possibly the opossum, muskrat, and fox in certain areas, are much reduced. From a total of $500,000,000 in 1929, the retail turnover in the fur business of the United States declined to $200,000,000 in 1935, owing partly to curtailment of business and deflation of values and partly to actual reduction in the numbers of wild fur animals. In Texas, where a fur-tagging law permitted an accurate check to be made, there was an actual decline in the number of furs taken from 1,407,884 in 1932-1933 to 912,276 in 1934-1935. This means a 35 per cent decrease—500,000 pelts, worth $325,000—in three years. As in Texas so it is in the entire country. Part of this decline was probably the result of lessened take because of low prices; but another part was undoubtedly due to a decrease in the numbers of valuable fur animals. Strangely enough, America's wildlife has been and still is largely ignored by business men and farmers. This observation applies with special force to the fur animals. The oversight of fur animal values is all the more difficult to understand in view of the fact that of all the wildlife resources, the fur animals have afforded a readier and more direct cash crop than have any of the others, over the greatest area and for the longest period of time. Great fortunes, and even great cities, have been built on the fur trade. More important, perhaps, than this, is the fact that

Photograph by Adolph Murie

ROCKY MOUNTAIN SHEEP

trappers as a class, including farm boys and others, really need the money. Many a farmer has kept off the relief rolls during recent years through his winter trapping.

News articles and other items in a widespread and nation-wide educational campaign have fully advised the public concerning the waterfowl—the ducks, geese, and swans—favorite objects of sport from the earliest days of the Republic, and formerly present in such numbers that little concern was felt, although spring shooting was the rule in many localities and the birds were freely sold in the markets and restaurants of big cities. During the past few years, however, difficulties in securing good hunting have been so obvious that extraordinary efforts have had to be exerted to save these popular game birds.

We can only guess at the numbers attained by some of the smaller animals, but it is certain that, in many instances, they were very large indeed. In some parts of the country the squirrels are important objects of sport. They function also as tree planters and as possible balance wheels on the increase of certain other forms of wildlife. Basing his figures on the known abundance of the gray squirrel in some localities and on the extent of its geographic range, Seton estimated that the gray squirrel population may easily have numbered several billions in eastern North America at the beginning of the nineteenth century.

Bailey, of the United States Biological Survey, in 1905 made a study of the prairie dog in West Texas. Usually, as he pointed out, the animals were found in scattered colonies, ". . . but over an extensive area lying just east of the 'Staked Plains' they cover the whole country in an almost continuous and thickly inhabited dog town, extending from San Angelo north to Clarendon in a strip approximately 100 miles wide by 250 miles long," a 25,000 square mile colony containing 400,000,000 prairie dogs.

The whales of the sea were formerly numerous enough to support an extensive industry maintained by nationals representing varous maritime countries. The American share in this business centered in the village of New Bedford, Massachusetts, and reached large proportions. Like most other wildlife resources, the whales were subjected to unreasonable slaughter; indeed, the history of the whaling industry as a whole has been a rather sad story of declining possibilities and steadily more restricted opportunities, owing to the remorseless pursuit and crassly unbusinesslike exploitation to which these greatest of living creatures have been subjected by man. Quite recently the countries interested have been trying to get together in an effective manner to perpetuate what remains of the whaling resource. Such efforts are as difficult as they are commendable, for they necessitate a type of international understanding and cooperation that is hard to secure, and perhaps still harder to enforce.

The Natural Range of Wild Animals

As indicated in the foregoing paragraphs, the natural range of many game animals of great potential value was formerly

Courtesy Fish and Wildlife Service

COYOTE, FAMOUS WOLF OF THE FAR-WESTERN PLAINS AND MOUNTAINS.

much more extensive than it is at present. The buffalo which ranged so widely over the continent is now virtually extinct in a wild state. The pronghorned antelope, considered by Seton to have occupied a primitive range of approximately 2,000,000 square miles, or 1,280,000,000 acres, is now represented by scattered remnants only.

The same may be said of a great many other forms of wildlife to which we have not referred at all, and which we shall not have opportunity to mention because of space limitations. We shall, however, briefly comment on several additional species that, for one reason or another, are of unusual interest.

The wild turkey, a strictly North American product, once occurred generally throughout the wooded sections of the eastern, southern, and southwestern United States, as well as in Mexico. Now it is gone from many of its former homes and its future is decidedly uncertain unless there is marked change in its treatment by man.

Thoughtful sportsmen and conservationists are becoming much concerned about the prairie chickens. Formerly represented in the Northeast by the now extinct heath hen, and at present in the northern Great Plains area and the Middle West by the greater prairie chicken, on the southern plains by the lesser species, and on the Gulf Coast by the Attwater prairie chicken, these birds are worthy of real attention. Handsome and grouselike birds, weighing up to one and a half pounds and exhibiting some of the most interesting courting habits known to American game birds, the loss of any of them is a real calamity. The heath hen has become extinct in recent years. The greater and lesser prairie chickens are much reduced. They have been so crowded out by field-crop agriculture and cut down by drought, overgrazing, and too much shooting, that their status is not encouraging in any part of their range. The Attwater prairie chicken, which formerly occurred on the Gulf coastal prairie from Louisiana westward into Texas and south to a point beyond Corpus Christi, has been all but eliminated. It is gone from more than 90 per cent of its former range, and is probably in worse condition than any other of the still existing forms. A far cry, this, from the days when prairie chicken shooting contests were held in Colorado County, Texas, and prizes awarded on the basis of the greatest number of the birds killed in a day!

Photograph by O. J. Murie

THE UNUSUAL SNAPSHOT OF A COUGAR TREED
Elwha River, Washington

The jaguar, el tigre of the Mexicans, really an American leopard and justly entitled to protection as an object of sport wherever it would not interfere too much with livestock, formerly ranged north in Arizona occasionally to the Grand Canyon of the Colorado, and was found widely throughout Texas. Of recent years there are few authentic records of its occurrence in the United States, though the species is seemingly quite abundant still in parts of Mexico. This is likewise true of the ocelot or leopard cat. No prettier fur is to be found among North American mammals, in the writer's opinion. Formerly the ocelot, which is still present in some numbers in old Mexico, occurred quite widely in the Southwest, either regularly or sporadically. Now within the United States it is restricted to a limited locality in the brush country of southern Texas, and if projected "developments" that would eliminate this brushy habitat finally do take place, the ocelot will be crowded out from even this last stronghold in our country. Likewise, the puma is becoming greatly reduced and restricted.

One last instance, the grizzly bear, noblest of American flesh-eaters, was formerly present widely over the western

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WHITE MOUNTAIN SHEEP ON AN ALASKA MOUNTAIN TRAIL

United States, as well as in Alaska and the extreme northern parts of North America, and in northern Mexico. Merriam's studies show what a wealth of forms were represented. Unlike the black bear, which is among the shyest of animals, the grizzly was courageous and much more inclined than the black to dispute man's encroachment on his hereditary range. In this way poor old *Ursus horribilis* (the name itself has a majestic sound) proved to be not so well adapted to modern conditions as the black bear. Now all the grizzlies are gone from the United States, except in a few scattered localities in the West, where they maintain a precarious existence under special protection or other unusual conditions. Fortunately, there are a good many of these splendid animals still remaining in Canada and Alaska.

The foregoing examples give an all too vivid and accurate picture of what has happened on a large scale to many species. Detailed consideration of our valuable wildlife shows a discouraging decrease in almost every instance during the three hundred years or more of our occupation of North America.

There are a few cases in which the natural range of wild animals has been increased as a result of man's activities. Everyone is familiar with the English sparrow and the starling in America, the muskrat in England and on the continent of Europe, the rabbit in Australia, the house mouse and the Norway rat generally wherever civilized man is found.

In most cases, unfortunately, these increases result from man's unintelligent meddling with natural conditions, and result in much damage to his interests. The Norway rat is undoubtedly the most dangerous and costly mammalian enemy of mankind in the whole world.

In a few places, favorable ecological conditions combined with protection by man or a reduction in the number of natural enemies have resulted in an abnormal increase in numbers of game species ordinarily considered valuable, and sometimes developed detrimental surpluses. Protection of deer on certain royal forests in England and on the continent of Europe has sometimes seriously interfered with the normal

Fish and Wildlife Service

CALIFORNIA BADGER

growth of the trees and other vegetation. The Kaibab incident in our own country is an illustration of the same sort. On the Kaibab Plateau north of the Grand Canyon of the Colorado, in the state of Arizona, the deer, numbering normally, perhaps 3,000 or 4,000 individuals, increased to a number estimated at 30,000 to 100,000 animals. The future of the deer's own food supply, and indeed of the Kaibab Forest, was threatened. Somewhat similar surpluses have developed in other parts of the Southwest and even in Pennsylvania, suggesting that game management should be concerned not alone with building up wildlife where game is deficient, but also with cutting it down where it becomes surplus. There is no more reason for opposing an open season on does or "antlerless" deer in such cases than for opposing the market of breeding cows on an overstocked livestock range.

Coming of Civilization and a Declaration of Indefensibles

The story of the development of America is full of meaning as it bears on our natural resources. Man's inventive genius, coupled with his occupation of the land, has "modified the earth," to use Marsh's expressive statement, and has helped, in all too many instances, to make his surroundings less favorable for his own future.

Below are reviewed some of the things for which civilized man is responsible. Here is a sort of Declaration of Indefensibles:

He has cut and burned the trees of the forest, in many instances leaving the affected area so poor that it cannot recover without costly plantings.

He has precipitately drained the marshes for his agriculture or for the alleged protection of his health, sometimes wisely, often wastefully. Not seldom have drainage enterprises turned out to be of little value for agriculture or for mosquito control, but they nearly always eliminate much valuable wildlife (waterfowl, fishes, fur animals, and a host of other creatures.)

With his roads man has penetrated every remaining fastness. The wild game has no remaining refuge. Except for a few preserves, the man with the gun can ride nearly anywhere and enjoy a "successful" hunt with a minimum of physical exertion or mental stimulus.

Man has polluted the streams and lakes of America, and even the waters of the sea itself. Salt water from oil wells, chemical wastes from industry, and raw sewage from towns and great cities are poured into our great drainage ways. Formerly clear and sparkling, with an abundance of fish, what are they now? All too often merely nauseating reminders of what once was a splendid past.

Man has plowed much land that should have been kept for livestock and wild game. He has grazed a great deal more land that should have been reserved for wildlife. He has planted his field crops in such a manner that erosion of the soil, mother resource of all the rest, is accelerated often to the point of destruction. The results of all this land mismanagement are becoming annually more obvious, through the increase in number and volume of floods, the augmented turbidity and even opacity of streamways that should be clear as crystal, the destruction of valuable fish resources, the silting and choking up of reservoirs and of irrigation works, the lowering of water tables, the drying up of springs, the increase in black blizzards of dust, and the abandonment by settlers of homes and lands.

Man has unnecessarily and unintelligently reduced the food and cover for wildlife. He seems not to have realized that every time he cuts a needed tree or a bush, every time he cleans a fence row or grazes the underbrush out of a woodlot, he thereby removes the life-giving food and essential cover of many living creatures—insects, mammals, birds, and game. It is of little use to liberate fish in streams if no fish food is there. There is just as little excuse for expecting either to keep or to produce bobwhite quail on farms barren of any food and cover for them.

Photograph by T. H. Scheffer

MARMOT EMERGING, WHISTLING AS HE COMES, FROM THE FRONT DOOR OF HIS LOFTY MOUNTAIN HOME.

Photograph by Fish and Wildlife Service

A PINE MARTEN (AMERICAN SABLE) IN HIS HOME IN THE NORTHERN PINES

Man has perfected his mechanical devices so that all creatures are threatened: guns, stronger, better, more of them; more efficient ammunition; automobiles, comfortable, speedy, easily capable of taking the sportsman five hundred miles in a single day to the place where the alert sports editor of the daily newspaper reports good shooting or fishing; airplanes that still further accelerate the process; traps and scents that lessen the chances for unwary fur animals to escape; huge juggernauts, called tree-dozers, to remove the jungles which in some cases afford the only remaining protection to some of our most interesting forms of wildlife!

Man has thoughtlessly removed the dead trees and brush which are so necessary to such forms as woodpeckers, owls, and raccoons, as well as to game; he has "cleaned up" the native plants on which the bobwhites principally feed at certain times of the year; he has campaigned against the marsh hawks and other hawks and owls that must be relied on to keep the snakes, rodents, and insects in a proper balance; he has at times eliminated rodents that are the necessary food of fur animals and valuable raptores; he has fought the predators, sometimes quite unnecessarily, seeming not to realize that in themselves the predators hold possibilities, on certain areas, of developing into as high class objects of sport as can be found anywhere, as well as being one element in a balanced wildlife program.

Man has overgrazed much of his private ranch land as well as the public domain, and then wondered why he was oppressed and pestered by weeds and jack rabbits, why his quail were gone, and why the brush increased on his pastures. Seemingly a clear case of cause and effect: graze out the grass, out go the game species and in come the weeds, jack rabbits, and brush.

On the other hand, man has developed an agricultural system so efficient that a seeming overproduction is one of its acute problems. He has built railroads, bridges, cities, and mechanical devices of all sorts that enable the well-to-do to live on a scale of luxury scarcely imaginable in other days. In short, he has developed the mightiest mechanical civilization of all time.

But what does this civilization rest on? The answer is clear: First, on the *renewable natural resources*—the soil, the waters, the forage growing on the open range, the trees of the forest, and the wildlife; and second, on the *nonrenewable natural resources*—oil, sulphur, stone, and minerals.

And what will happen when the soil is depleted, the waters exhausted, the forage used up, the forests cut down, the wildlife extirpated, and the oil and minerals gone?

Do we live in a fool's paradise? Wildlife conservation is but one aspect of the larger world problem of conservation, on the solution of which depends the entire future of the human race.

The Problem of Restoration

A rather discouraging outlook, it seems, and so it is, but restoration is by no means hopeless. It is true that a lot of people, both farmers and sportsmen, barbers and scientists, have surrendered, thrown up the sponge. I have encountered farmers who have decided to get their share of game while the getting is good, and scientists, who have almost turned defeatist in the fight for conservation, have concluded that we are living at the close of the "Age of Mammals," and that our interesting mammals and birds—and in all probability we ourselves—will shortly pass out of the picture. Perhaps so, but in my opinion, there is no justification for such a view. There is little probability that we can collect our life insurance so soon or so easily! We cannot escape our responsibilities in this particular way.

It is the considered opinion of the writer that if the American people want fish in their streams, bobwhite quail in their coverts, deer and wild turkey in their forests, song birds and insectivorous species about their farms and homes, they can have them in generous abundance. This opinion is based on some concrete instances in which actual results constitute unmistakable demonstrations of the possibilities. Three of these demonstrations will now be considered.

1. *Bobwhite quail.*—The painstaking scientific research work of H. L. Stoddard and C. O. Handley in southern Georgia and northern Florida has resulted in an encouraging increase in the bobwhite population on the great plantations of the region. Here is a positive demonstration on a grand scale of the possibility of substantially increased production of bobwhites throughout the vast southern pine forest area, extending over parts of at least fifteen southern states.

2. *Big Game in the National Forests.*—During the past several years, under the enlightened management policies of the Federal Forest Service, big game is reported to have increased 140 per cent in the national forests. Nor has this increase entailed a rigorous program of absolute protection, except in unusual cases, but rather true conservation through wise use. Here, then, we have a second demonstration, on a series of forests and ranges that embrace more than 180,000,000 acres of well-handled public land, of the possibility of saving our big game, whenever we wish to do it.

Photograph by Adolph Murie

ALASKAN WOLF

3. *Deer and Wild Turkey.*—It is well known that deer and wild turkey are more abundant in the Edwards Plateau country in Texas than in many similar places, and that the receipts of many ranch owners from hunting leases are important ranch assets in the region. It will be remembered that the county agents of six Edwards Plateau counties in Texas estimated the income derived from outside hunters entering these counties to hunt at not less than a million dollars in a single season. (1935-1936.)

Photograph by D. A. Spencer

PORCUPINE DINING ON WILD CHERRY

The Edwards Plateau situation, like the others, convincingly indicates the entire practicability of building up the deer and turkey population over a vast section of the Southwest which at present is characterized by a shortage or even absence of these excellent game animals.

There are some rather simple measures, however, that will have to be adopted if American wildlife is to be properly maintained and increased. The willingness and ability of the public to do these things will be a measure of their real desire for game. Here are some of the essentials:

1. Support a strong educational program, including research, teaching, and extension, so that the present and future generations will have the facts and will be inspired to act in the light of them.

2. Take politics out of the state game departments in all instances, so that merit and good behavior will be the sole criteria for service in conservation administration.

3. Give the responsible state agency full powers and responsibilities to set seasons and bag limits, and to make other regulations regarding the taking of game and the conservation of wildlife, subject to legislative approval.

4. Give the game department money enough to work with. The easiest way to do this, at present, is to adopt the so-called universal hunting license law, which, while it means a slightly

Photograph by A. M. Pearson

GRAY FOX

increased cost of hunting, will afford the sportsman a chance to get something when he goes afield.

5. Provide food and cover for wildlife. For the most part this can best be done, not by an expensive planting program, but by protecting the native vegetation from overgrazing, and letting Nature herself do the job. Fencing off the heads of gullys so that valuable plants will have a chance. Eliminate overgrazing. If the vegetation is removed to get rid of the boll weevil or other insects, numerous song and insectivorous birds will be eliminated at the same time, and the game will go, too. Earlier ideals of ultra clean farming might well be replaced by a better balanced program according to the best information available at present.

6. Know your wildlife. Count your quail, turkeys and deer, and so regulate the take that the seed stock will not be drawn upon. If you are a landowner, join with your neighbors to form a game preserve demonstration association in cooperation with the Extension Service at your nearest agricultural and mechanical college.

7. Work out a cooperative agreement between the farmers and sportsmen, such that the interests of both will be more adequately safe-guarded. The farmer will have to be equitably reimbursed for his game, the sportsman assured of better hunting.

8. Keep in touch with your game department, with your agricultural and mechanical college, with the United States Biological Survey, and practice the best modern methods of game management. The game wardens, county agents, and teachers of vocational agriculture will help you if you call on them.

9. Do not forget the fur animals. As rapidly as practicable, work out a plan whereby trapping can be permitted on a basis that will avoid depletion of the stock, but will pay an appreciable return to the landowners as well as the trapper himself.

10. Wildlife restoration, in the opinion of the most enlightened and advanced wildlife managers, is not so much a matter of expensive plantings as of letting Nature grow her own vegetation; it is less a matter of propagation in captivity, and more a matter of encouraging maximum natural production of game; it is less a matter of introducing exotics or stocks of game from somewhere else, and more a matter of making conditions favorable for wildlife already on the ground. Restoration is not only possible, but is highly desirable. It should supplement the existing income of the landowner, and promote the utilization of lands not now used to best advantage. It should result in the substantial increase of a resource already estimated to be worth more than a billion dollars to the United States each year. It should add to the store of those natural treasures that, all money consideration aside, make life more interesting, more worth living.

11. Make full use of the natural crops on wild land—forest land, marshland, bottom land, range land. Perhaps such areas will produce more actual income through the natural crops: fur animals, fishes, lumber (harvested on a sustained yield basis), stovewood, wildlife, recreation, water supply, a moderate amount of grazing, and natural wood's products (nuts, berries, etc.), than they would if made over into farms. Much land is not well suited to field crops or grains. Crops should be suited to the land, not lands to the crop. Seemingly, in view of present overproductions, fewer acres in corn and cotton are needed, but there is not likely to be an oversupply of wildlife for some time to come.

THE SIXTH GREAT LAKE

Lake Nipigon, north of Lake Superior, is a place of romantic associations for people who have been fortunate enough to vacation in that country. Nipigon, in 1943, will become a link in the chain of great lakes, for this very year dams that have been quietly in the making on the Albany and Ogoko Rivers, tributary to Hudson Bay, will build up a new lake of 1500-square-mile area and divert an average of 5000 cubic feet of water a second to useful work in the St. Lawrence System. Power from that amount of water will add about 360,000 horsepower, 10,000 of it at the Soo and 150,000 at Niagara. Some of the power will be generated near Lake Nipigon to aid in another project of considerable interest and importance: namely, the draining of Steep Rock Lake and the development of the iron ore deposit underlying it.

CORRECTION

In the May issue of THE LIVING WILDERNESS on page 21, the area of Great Britain should be compared, not with the Sawtooth Area of Idaho, but with central Idaho as a whole.

Photograph by Blank

MAMMA SOMETIMES SPANKS BABY BLACK BEAR, AND MAMMA IS SOME SPANKER

Concerning the Wilderness Society

1840 Mintwood Place, Washington, D. C.

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OBJECTS

(1) To enlist the American people in the preservation of the American wilderness.

(2) To spread the conception that the wilderness is a valuable natural resource of the people and should be conserved as such.

(3) To promote nation-wide cooperation in resisting the invasion of such wilderness by the sights, sounds and other influences of civilization, including (a) routes which can be used for mechanized transportation, (b) all commercial developments, and (c) those non-commercial improvements and influences which clash seriously with the primeval environment.

The whole makes for permanent national sentiment favoring wilderness preservation and against unnecessary public highways. No additional charge for publications.

LOOK BACKWARD, THEN FORWARD

It was to meet the emergency of a sudden excessively dangerous decline in America's unequalled wilderness that this movement was undertaken in 1935 at their own expense by eight men engaged in land use occupations.

IF you believe in the principles we advocate and IF you agree to advocate them earnestly in your own neighborhood among its associations and your friends, we shall be glad to accept your membership at one dollar a year including all our publications.